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ART. I. *Obscure Pericarditis—Dilatation of the Heart—Peculiar Species of Tumour in the Right and Left Ventricle, and Right Auricle—Œdema of the Fauces and Larynx, and Glottis—Death from Suffocation.* By SAMUEL JACKSON, M. D. Assistant to the Professor of the Institutes and Practice of Medicine and Clinical Practice in the University of Pennsylvania. [With a coloured Plate and two wood-cuts.]

MR. —, aged fifty-four years, temperament sanguine nervous; previous health generally good; had suffered in former years attacks of acute inflammation of abdominal viscera; had been actively engaged in business for many years, and exposed to great mental anxiety; habituated to the moderate but daily use of spirituous drinks. In the commencement of January, 1834, he returned from a fatiguing journey of twelve hundred miles, during which he was exposed to severe cold, especially in crossing the Alleghany ridge. From the state of the roads, the stages could not run, and anxious to reach home, he travelled across the mountains in an open mail cart. He suffered severely from the cold and violent jolting, the vehicle being without springs.

After reaching home, he complained of excessive fatigue, kept in bed for two days, took some medicine without advice, and resumed his accustomed pursuits. He kept about, complaining frequently of shortness of breath when ascending stairs, of being easily fatigued, and often sighed deeply. This last circumstance was attributed to mental causes, at the time, as his affairs were not in a very satisfactory state. On the 29th of January, I was requested to see him.

The night previous he had been out on a visit, complained of being cold and fatigued when walking home, and in the morning felt too unwell to get up. I found him complaining of cough, with sense of oppression in the chest; he had no heat of skin; the face peculiarly pallid; pulse exceedingly feeble and frequent; the chest every where resonant on percussion; the respiratory murmur pure in every part of the chest, gave no indication of pulmonary affection; the action of the heart rapid, its sound feeble. A blister was directed to the chest, with a composing cough mixture.

The next day, 30th, he felt relieved; the oppression diminished.

February 1st.—Had passed a restless night; indescribable feelings in the chest; skin cool and shrivelled. Directed emulsion of assafœtida, with acetat. opii.

2d. Night again restless; skin cold, pallid, face waxy aspect; great anxiety; the chest again examined, furnished same pulmonary indications; the heart alone seemed affected; the pulse irregular, so rapid as scarcely to be counted; the sound of the heart feeble and indistinct; the organ appeared to labour; no morbid sounds; head remarkably clear; stomach in excellent state. In crossing the mountains he had used stimulants more freely than usual, and suspected his present exhaustion might proceed from their sudden withdrawal. The suggestion was adopted, and warm toddy, with carb. ammoniae prescribed. 12 M. Same state. 3 P. M. Has rallied in some measure; skin warmer, and feels more comfortable. 8 P. M. Skin still warmer, dry; pulse has more force. Continue stimulants.

3d. Night more tranquil than preceding; had one sinking spell, almost approaching to fainting; examination of the chest presented some indications as before, both as to the lungs and the heart; has a sense of extreme prostration and debility. When lying with his head low, the face is purple, from the stagnation of the venous circulation; when it is elevated, it immediately becomes pallid. The veins of the extremities very much distended, and cannot be emptied by pressing upwards along their course. Senses and intelligence are perfect; stomach in excellent condition; bears the stimulants administered every half hour perfectly well; sinapism applied along the spine; blister over the region of the heart, and on the lower extremities; calomel gr. i. every hour. No change occurred during the day. When the stimulants are withheld, the sense of sinking and disposition to fainting comes on. The stimulants were administered every half hour. No other effect apparent than to obviate the tendency to fainting and sinking. At 10 P. M. Tinct. opii, gtt. xxv.

4th. In the night had one sinking spell: this morning pulse rapid,

irregular, and without force; hands purple; respiration made with considerable muscular effort; had a natural evacuation in the night; tongue moist and clean; sense of extreme exhaustion; mind clear; had the morning papers read to him; stimulants continued, with nourishing soups. 5 P. M. Had during the day several fainting and sinking spells; is then covered with cold sweats; pulse scarcely perceptible. The following mixture prescribed:—Sulph. quinæ, gr. xij.; Elix. vit. 3ss.; Syrup zingiberis, 3ss.; Aq. fluvial, 3iss.; one drachm every hour. Stimulants continued. 10 P. M. Appears to have rallied in some measure; fingers less purple; pulse more distinct.

5th. A more tranquil night; has a feeling of more force; circulation improved; had the newspapers read to him this morning; is constantly in semi-erect position supported by pillows; stimulants diminished one half; nourishing soups. 10 P. M. Has continued in better state during the day.

6th. Disturbed in the night by a fire that occurred in the vicinity; was much agitated, and lost his sleep; the disposition to sinking and fainting was renewed and increased; stimulants again resorted to and increased; had three passages during the day, each perfectly natural; rallied in the day, and had augmented thirst; stimulants withdrawn entirely, and small pieces of ice held in the mouth to allay thirst.

7th. Rested well; has more force; has used no stimulants during the night; tongue has become red, with white fur; thirst increased. In evening prostration; respiration laboured; pulse fluttering; solution of sulph. quinæ and toddy renewed. 10 P. M. No improvement; carb. ammoniæ and wine-whey.

8th. Restless night; but little change; tongue moister; had three stools in night, all natural; pulse small, feeble, irregular; veins turgid with blood that cannot be forced along them; respiration hurried, and irregular; stimulants continued; frictions on the spine, with ol. succin. R. Spts. camph.; ol. terebinth and ol. succin. m. j. every two hours.

9th. Tolerable night; symptoms nearly the same; has appetite; stimulants withdrawn, except spts. Camphor, m. ij. every two hours. Evening. In same state.

10th. In the night became hoarse, with feeling of soreness in the throat; an obstruction there causes difficult respiration, and nearly prevents swallowing. On examining the throat, the whole fauces were tumid; the uvula swelled and thickened; the velum and soft palate pressed down like an inflated bladder; very slight redness; skin warmer than it has been, and pulse possess more force. Sinapsed poultice applied to the external surface of the throat; gargle of infusion of Cayenne, and of a solution of iodine alternately used every

fifteen minutes; punctured the swelled and tumid velum; a thin fluid oozed from opening. 1 P. M. Difficulty of respiration and suffocated feeling increased; applied saturated solution of nitrate of silver to the fauces, and again punctured the swelling; swallowed some wine gruel with tolerable ease, and had appetite. 4 P. M. Swelling of fauces greatly augmented; respiration suffocating. The danger of suffocation had become so imminent I sent for a surgical friend to perform tracheotomy as the only recourse, and in the mean time punctured freely the tumour, filling up the fauces. A thin bloody fluid issued in large quantities, but without relief. Suffocation progressed every instant; longer delay was inadmissible, and with no other instrument than a pocket scalpel I attempted the operation. On making the incision through the skin, a thin bloody serous fluid was found existing in the cellular tissue, from which it discharged in a copious stream. A small opening only was accomplished in the trachea, into which the infiltrated cellular fluid was sucked in inspiration. Suffocation was completed, the patient's head fell over, the face bloated and blackened, and in a moment he expired. Half an hour only had elapsed since I had entered the room, so rapid had been the progress of the oedematous effusion.

The autopsy was performed by my friend, Dr. MUTTER, to whom I am indebted for the following statement of the condition of the organs.

Autopsy, twenty-four hours after death.—Present Drs. S. JACKSON and GODDARD.

Exterior.—The whole of the thoracic portion of the trunk anteriorly, and of the thoracic and dorsal portions posteriorly, as well as the superior extremities as far down as the elbows presented a singular mottled and speckled appearance. The discoloured spots which varied in size from a line or two in diameter up to that of a space some inches in extent, were of a mulberry red colour, and resembled very much the common petechial blotch. This peculiarity of the surface did not make its appearance until some hours after death, and (as we shall see directly,) depended upon the effusion of a *bloody serum* in the cellular tissue of these portions of the trunk; that of the dorsal region was owing also in part to the gravitation of the blood, and is generally present to a greater or less degree in almost all cases where the body has rested upon the back. Tympanitic distention of the abdomen existed to a trifling extent; considerable degree of embon-point; small incision along the front of the larynx made in performing the operation of laryngotomy; no rigidity of the muscular system observed; little or no *fœtor* exhaled by the corpse.

Neck.—The anterior portion of the throat particularly presented the

about $\frac{3}{4}$ jij. of a straw-coloured serum, and was lined by a false membrane, (which was nearly general, though most perfect towards the apex of the cavity,) about one or two lines in some places in thickness, of considerable firmness, and very adherent. Besides this lining there existed several bands of organized lymph, varying in length from two to five lines, and very strong, which passed from the pericardium to the heart, and bound the *two firmly together*, so that the motions of the heart during life must have been materially impeded. Neither the external nor internal layer of the pericardium appeared at all thickened or otherwise diseased. The surface of the *heart* instead of presenting its usual glossy and shining appearance, was rough, and of an orange or straw colour. This appearance was due to the existence of a false membrane, similar in most respects to the one lining the pericardium. It was nearly as general, and seemed upon minute examination to consist of two portions, one firm, homogeneous, and about a line in thickness, adhered very closely to the heart; into this layer the fibrous bands alluded to, seemed, (if I may be allowed the expression,) to be inserted; the other or outer layer was softer, of a deeper orange tint, about half a line in thickness, and somewhat mameled. The heart itself much exceeded its ordinary dimensions, it nearly equalling in size that of a twelve months' old calf; its colour was entirely normal, and its consistence a little softer than usual. Commencing with the right auricle, we proceeded to the examination of its cavities.

Right Auricle.—The right auricle was considerably dilated, and its parietes somewhat hypertrophied, particularly those portions forming the walls of the sinus. At this point they were about two or three lines in thickness. Between the *musculi pectinati*, and sprouting, as it were, from the lining membrane of the auricle, we found several tumours, varying in size from the head of a pin, up to that of a large bean, of a peculiar shape, and whitish or light pink colour. They were generally spheroidal, but presenting a number of facets, which gave them a shrunken or shrivelled appearance. They were attached either by a narrow pedicle, or by several cords, none of them had an extended base. When cut open they were found to consist of a whitish, somewhat firm capsule, about half a line thick, containing a reddish-gray, semi-fluid mass, which resembled very much disorganized blood, or the thick lees of red wine. The capsule seemed to be perfectly organized. They were situated chiefly along the upper portion of the sinus, or that part nearest the base of the heart; there was one, however, (the largest met with in this cavity,) attached to the anterior division or flap of the tricuspid valve; it equalled in size a large filbert, and must have materially

mulberry red colour of the upper parts of the trunk. Upon making an incision through the integuments along the front of the larynx and trachea, in order to dissect out these organs, there occurred a copious flow of a *thin dark bloody serum*, contained in the cellular tissue. As we advanced in the dissection, the flow of this fluid became so copious as to materially retard the operation, and it was necessary at each stroke of the scalpel to apply the sponge. We found it diffused not only through the superficial cellular tissue, but also in the more deeply seated, even indeed down to the spine. In proportion as it escaped, the parts assumed a normal colour.

Larynx.—The cellular tissue of the larynx, both externally and internally, was œdematos to a great extent. Externally it was filled with the bloody serum already alluded to; internally with a transparent one. The internal œdema commenced at the apex of the epiglottis cartilage, and extended below the vocal cords, and varied in thickness from one to six lines. The aretено-epiglottoid doublings, and the cellular tissue surrounding the arytenoid cartilages, were the points at which the œdema was greatest. Such was the degree of their distention, that the superior orifice of the glottis was almost entirely closed up; (Plate I, Fig. 1, shows this condition of the parts very well,) laying open the larynx, we found the œdema so extensive, that the rima glottidis was *completely* closed by it, when the parts were put in situ. The ventricles of MORGAGNI were almost entirely obliterated, (see Plate I. Fig. 2, for a correct representation of the appearances presented by the larynx.) The lining membrane of both larynx and trachea, presented a perfectly healthy appearance. The fauces and soft palate were likewise perfectly normal. The cartilages also exhibited no marks of a pathological condition. The immediate cause of death in this case, was the condition of the larynx just described, which prevented the introduction of air in sufficient quantities into the lungs.

Thorax.—Finely developed, and well arched anteriorly; sound on percussion normal on both sides, with the exception of the anterior inferior portion of the left, where it was flat. Petechial appearance of the surface; costal cartilages ossified. The incision of the integuments was followed by a copious flow of bloody serum. Upon raising up the sternum and costal cartilages, the anterior mediastinum was found to contain some fatty matter, and to be considerably dilated towards its cardiac portion. The *pericardium* occupied a much larger portion of the left thoracic cavity than usual, and also a large portion of the right; its posterior surface was glued to the diaphragm by strong short cellular tissue for some distance; it contained

interfered with the venous circulation. See Fig. 4, which represents the sinus of right auricle laid open, and of two-thirds of the portion of the tumour situated on the interior flap of the tricuspid valve.

Fig. 4.



Right Ventricle.—This cavity was filled with a black coagulum, which extended into the orifice of the pulmonary artery, it was somewhat enlarged, though not to so great an extent, comparatively speaking, as the other cavities of the heart; its parietes were slightly hypertrophied, and of a healthy consistence. The columnæ carneæ, as well as the chordæ tendinæ, were also much larger than usual. At the most anterior angle of the cavity, and in that portion of it forming the anterior wall of the heart where this viscus is in situ, there was a large group of tumours, resembling in every respect those already described as existing in the auricles, they were however, much larger than the former, and were partially concealed by the columns, by cutting out one or two of them; the larger portion of the collection was distinctly brought into view. (See Fig 5, exhibiting a section of the apex of the heart; *a*, right ventricle; *b*, left ventricle; *c*, inter-ventricular septum; *d, d*, tumours.) The orifice of the pulmonary artery, as well as its valves, presented a dull red colour. The valves of the ostium venosum, with the exception of the anterior one, were flexible, and every way normal.

Fig. 5.



Left Auricle.—The left auricle was dilated, and its parietes slightly hypertrophied. None of the tumours described were met with in this cavity; orifices of the pulmonary veins not inflamed.

Left Ventricle.—This cavity was also dilated, though its parietes were not hypertrophied; some of the columns seemed larger and more firm than usual. In that portion of the cavity, which forms the apex of the heart, there were several tumours found, resembling those met with in the right cavities. The largest tumour found in the heart was situated at this point, and equalled in size a large English walnut; it was rough on the surface, and contained a fluid similar to that found in the others, (see Fig. 5.) The valvula mitralis was perfectly normal. The orifice of the aorta, as well as the aortic valves, presented a dull red colour, similar to that met with in the pulmonary artery.

Arteries.—The lining membrane of the aorta, commencing at its orifice, and extending to some distance below its curvature, was covered by a layer of coagulable lymph, about half a line in thickness, and apparently of recent formation, as it could be detached from the

subjacent serous coat with great facility; its surface was perfectly smooth. Upon raising this up, the serous coat of the artery presented the appearances of an acute inflammation, manifested by its bright and permanent vermillion hue, its increased thickness, and by the gradual termination of the redness some inches below the arch. The valves, at their bases alone, were covered by the false membrane. The pulmonary artery presented the same morbid phenomena. The occurrence of this albuminous exudation upon the surface of the serous coat is considered by BAILLIE, LAENNEC, ANDRAL, GENDRIN, GUTHRIE, &c. as the most positive indication of the previous existence of inflammation, (see Plate I. Fig. 3.)

Abdomen.—The viscera of the abdomen, without exception, were found in a perfectly normal condition.

Brain and Spinal Marrow.—From the lateness of the hour at which the post mortem was made, these viscera were unavoidably passed over without examination.

Observations.—From the preceding facts, it appears that dilatation and a slight hypertrophy of the right pulmonary heart existed; the species of hypertrophy denominated by BERTIN excentric hypertrophy. The lining membrane was slightly injected, but had none of the more positive signs of active inflammation. The most remarkable and peculiar pathological feature, were the tumours existing in the different cavities. They are of rare occurrence, and their origin is involved in much obscurity. Laennec first clearly indicated a lesion of this character, which he describes under the appellation of globular vegetations, (Traite de l'Auscultation, vol. ii. p. 630.) The only difference between the globular vegetations of Laennec and those of the present case, exists in the exterior covering. He describes them as small, spherical, or ovoid balls or cysts, from the size of a pea to that of a pigeon's egg; the exterior surface being smooth, equal, and of a yellowish white. In this case the exterior surface presented numerous facets, and bore a strong resemblance to the crystallization of the garnet. In other respects the description of Laennec tallies precisely with the appearances observed in the specimen of this case.

The origin of these tumours it is not possible to trace with certainty; they have the aspect of a coagulum of blood, enclosed in an organized cyst, and partially organized itself; but how this should occur, our present knowledge does not enable us to form a conjecture. Polypi-form concretions of the blood are of very common occurrence in the heart, and are often the cause of great embarrassment to the circulation, and finally of death. These concretions, at times, appear to acquire a certain degree of organization, yet they are very different in form and character to the globular vegetations. It is safer at present to refrain from all conjectures on this subject.

In the foregoing case a circumstance of interest also was present. Acute pericarditis existed, as was ascertained by the autopsy. But during life it was manifested by no positive diagnostic signs. The irregularity of the contractions of the heart exist wholly independent of pericarditis. I saw a gentleman in a consultation visit this spring, whose heart acted in the most irregular manner, with very feeble contractions. He died soon after quite suddenly from apoplexy. The pericardium, whose inflammation I had suspected to be the cause, was reported to me to be healthy, but the substance of the heart was softened, and an ulcer existed in its parietes.

In this case no fever, or acute pain, the common attendants on acute pericarditis, were present. The mind too so often disturbed with agitating fears in that disease, was perfectly calm and tranquil. From the obscurity of the symptoms I felt entirely at a loss to determine the true diagnosis of the affection. A cardiac lesion was evident, and a difficulty in the course of the circulation was apparent, but the precise nature of either could not be determined.

On a review of this case, I feel at a loss in deciding whether it would have been a preferable course to have attempted blood-letting for the relief of the circulation, notwithstanding the strong evidences of debility, instead of stimulating. From the apparent effects of the stimulants, they were indicated. The symptoms were lightened, and before the effusion occurred, a very positive amendment had taken place. But was not the effusion one of the effects of the stimulants? Yet why should their action be so local as to affect exclusively the throat? These questions it is difficult to solve.

Aortitis also existed in this case, yet no signs were present to indicate its existence. The pulse in this form of disease is usually tense and hard. The irregularity and feebleness of the heart's action may have controlled this symptom, usually produced by arteritis.

The immediate cause of death appears entirely unconnected with the cardiac lesions. The symptoms originally present, and indicative of disease in the central organ of the circulation had been yielding; a decided amelioration had taken place, when without any assignable cause, the œdematosus condition of the fauces and neck ensued, extending to the larynx.

That the cause was local is evident from the œdema having been limited. In the external cellular tissue the effused fluid was deeply coloured with blood.

I have met with several cases previous to this, of œdema of the fauces of a lighter degree, and producing very suffocative respiration, showing its extension to the glottis. They all recovered. This is the first instance I have seen of the disease in a fatal form.